



Optimal Solutions for the Future

NX II series



**High-Precision,
High-Speed Vertical
Machining Center**

NX II series

NX 5500 II
NX 6500 II

ver. EN 160324 SU

Basic Information

Basic Structure
Cutting
Performance

Detailed
Information

Optimized Tool
Processing Solution
Options
Capacity Diagram
Specifications

Customer Support
Service



NX II series

The NX II series vertical machining centers are designed with a thermal-symmetric bridge type structure to optimise precision and workpiece quality. High accuracy is also enhanced by the constant pre-load high speed spindle. Operator convenience is improved by optimum accessibility and operator functions.



Contents

02 Product Overview

Basic Information

04 Basic Structure

07 Cutting Performance

Detailed Information

08 Optimized Tool Processing Solution

09 Standard / Optional Specifications

13 Capacity Diagram

18 Machine / NC Unit Specifications

22 Customer Support Service

Sample work



Cellular phone



Pocket



Pet Bottle



Door Knob

Improved Spindle Rigidity and Life

Improved spindle rigidity in low speed range and achieved long spindle life with constant pre-load spindle in high speed range.

Stable bridge type structure

Thermal analysis of the symmetrical structure and minimal overhang of the bridge type machine structure provide optimal solution for high-speed / high-precision processing.

Optimized Mold Processing Solution

Thermal error compensation system, high speed spindle, high accuracy contour control, tool measurement system are provided as standard to improve mold processing performance.

Basic Structure

NXⅡseries have the Bridge type structure for high-performance, high-accuracy machining.

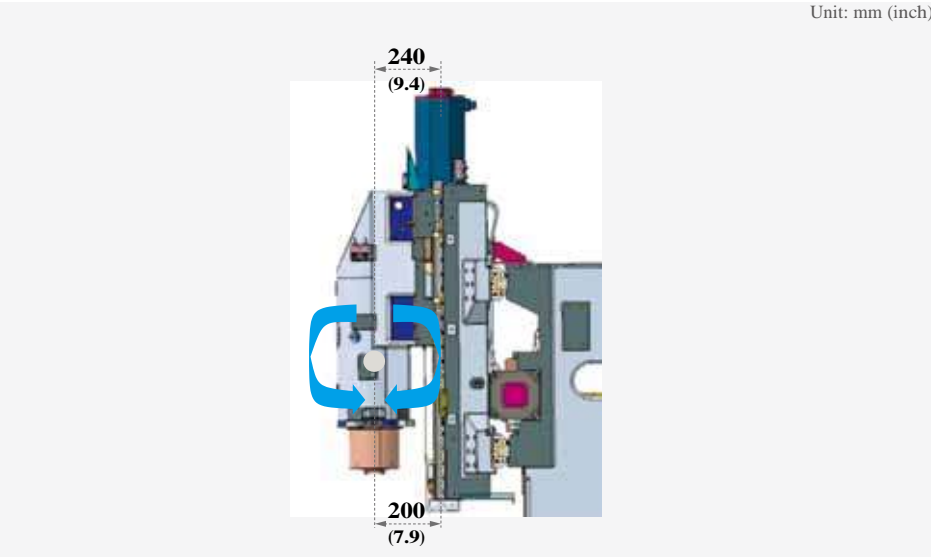
Bridge Type Structure

Thermal analysis of the symmetrical structure proves that this is the optimal solution for high precision machining of mild products.



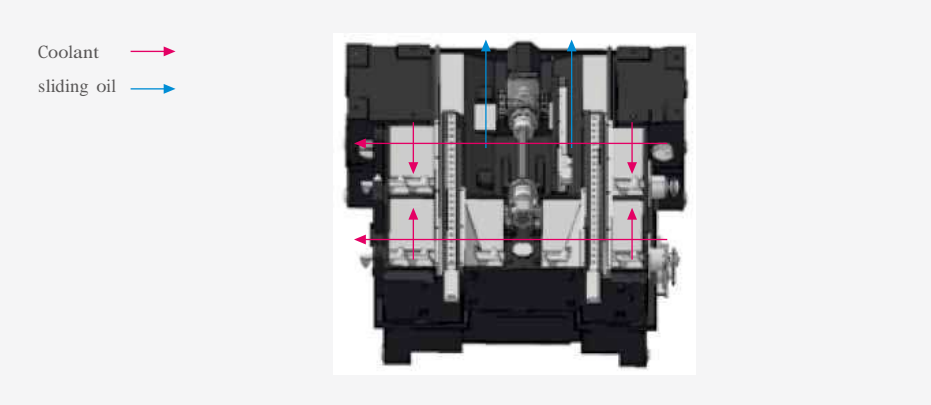
Gravity Center Drive Structure

By minimizing the distance between gravity center and the feed drive center, the inertia movement is reduced allowing for faster feed rates and a more precise part.



Oil Separator (NX 5500Ⅱ)

Coolant and sliding oil are separated in the bed structure.

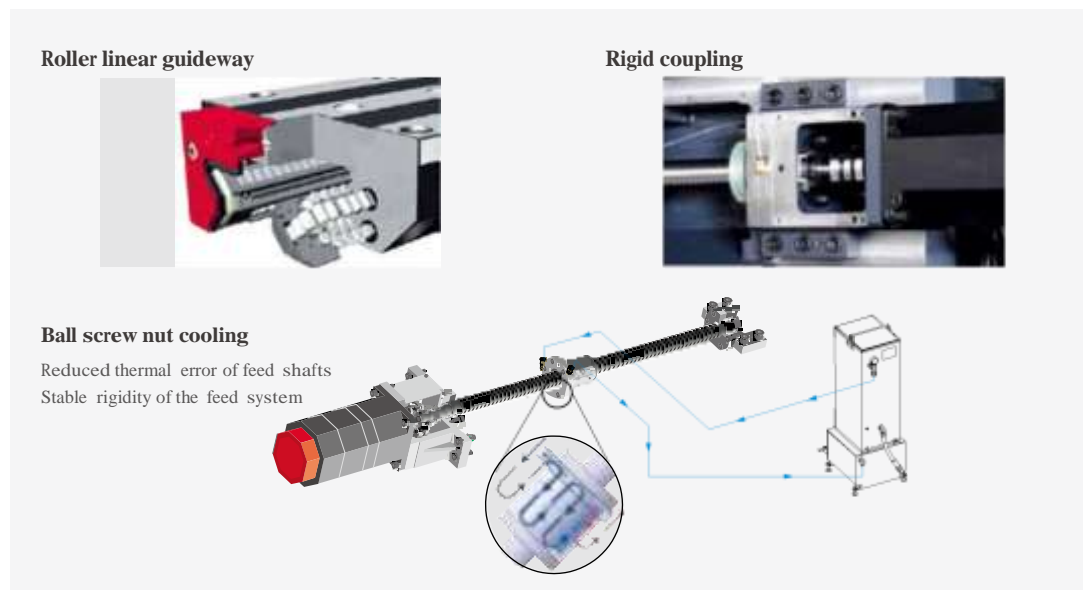


Feed Shaft

The linear axes are equipped with roller linear Guideways for increased rigidity and a cooling system as standard features to minimize thermal error.

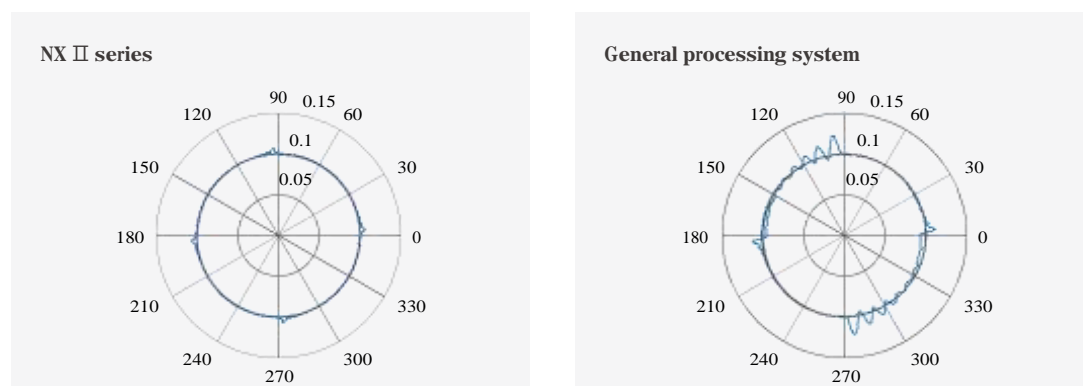
High-precision Travel System

Roller-type linear Guideways, high-rigidity coupling, and nut cooling system achieve high rigidity and outstanding linear axis accuracy of linear feed drive system.



High Power Servo Motor

The responsiveness of each axis feed system is improved by reducing the load / motor inertia ratio by 50%.



Tool Changer

Rapid tool change reduce idling time and improves productivity.

Automatic Tool Changer

Enhanced productivity achieved with the high speed tool changer.

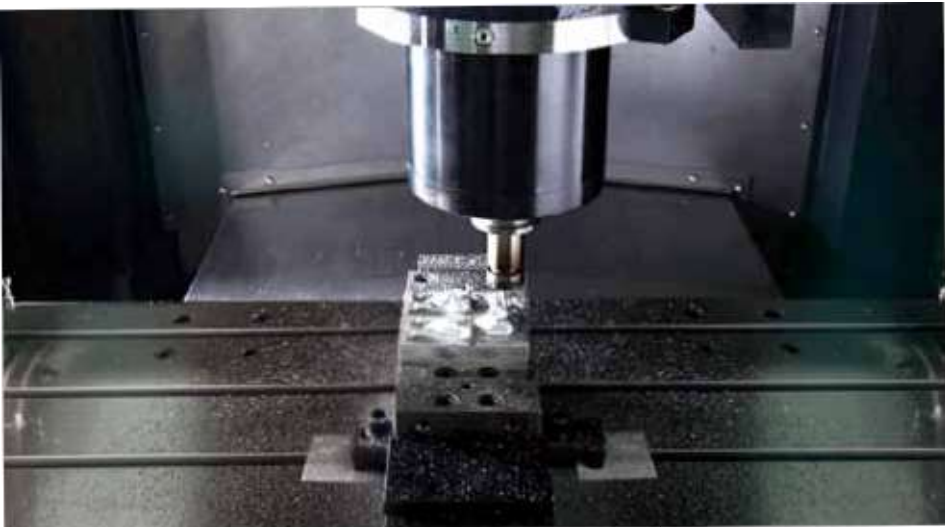


Table

Wide cutting area
for cutting various
workpieces.

Wide Cutting Area

The size and load capacity of the table allow the setting up and cutting of larger workpieces of various shapes.



Item	Unit	NX 5500 II	NX 6500 II
Table size	mm (inch)	1000 x 550 (39.4 x 21.7)	1200 x 650 (47.2 x 25.6)
Table loading capacity	kg (lb)	700 (1543)	800 (1763)

Spindle

High-precision spindle
and excellent dynamic
balancing ensures stable
surface accuracy by
minimizing vibration in
high speed cutting.

High-rigidity, High-precision Spindle

Adopting a new constant preloading structure, improved spindle rigidity in low speed range and achieved long spindle life.

Max.spindle speed

20000r/min

30000 / 40000 r/min Option

Spindle motor power

22 / 11kW (30 / 15 Hp)

Spindle Type and Tool Specification

High speed spindle up to 40000 r/min can be selected according to the workpieces material and cutting conditions. Dual-contact spindle can be selected to improve surface roughness and extend tool life by firm mounting of the tools on the spindle.

Item	Unit	20000 r/min		30000 r/min option	40000 r/min option
		std.	opt.		
Spindle motor power	kW (Hp)	22 / 11 (30 / 15)	22 / 11 (30 / 15)	18.5 / 13 (25 / 17)	5.5 / 3.7 (7 / 5)
Taper spindle	-	BBT 40	HSK-A63	HSK-F63	HSK-E40

Spindle Cooling System

Cooling system removes heat generated at the bearings and motor to minimize thermal error. The air-oil structure supplies high pressure air and lubricant to the spindle bearings to remove the heat generated at the bearings and extend service life of the machine tool.



Cutting Performance

Delivers an excellent performance in diverse machining conditions.

Z Axis Fine Feeding

Machine	NX 6500 II	
Item	Pattern mold	
Material	HP4M	
Condition	Tool	F1 Ball Endmill
	Spindle speed / Feed rate	Speed : 19000 r/min Feed : 800mm/min (31.5 ipm)
	Time	134 hr

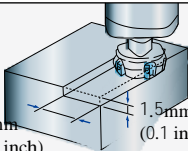
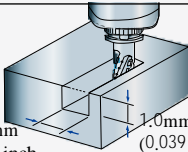
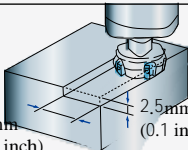
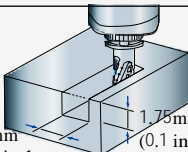
PITCH Y axis : 200 mm (7.9 inch)

Surface

Z axis : 0.4mm Repeat feed (0.016 inch)

PITCH X axis : 400 mm (15.7 inch)

NX 5500II [20000r/min]

Face mill (SM45C)			
Ø80mm (3.1 inch) Face mill (6Z)			
Machining removal rate cm³/min (inch³/min)	Spindle speed (r/min)	Feed rate mm/min (ipm)	
292 (17.8)	1750	3045 (155)	
R Cutter (NAK80)			
Ø50mm (2.0 inch) R cutter (3Z)			
Machining removal rate cm³/min (inch³/min)	Spindle speed (r/min)	Feed rate mm/min (ipm)	
115 (7)	1270	2290 (90)	
Face mill (GC25)			
Ø80mm (3.1 inch) Face mill (6Z)			
Machining removal rate cm³/min (inch³/min)	Spindle speed (r/min)	Feed rate mm/min (ipm)	
436 (26.6)	1750	2730 (107)	
R Cutter (NAK80)			
Ø50mm (2.0 inch) R cutter (3Z)			
Machining removal rate cm³/min (inch³/min)	Spindle speed (r/min)	Feed rate mm/min (ipm)	
101 (6.2)	960	1150 (45)	

~The results, indicated in this catalogue are provides as example. They may not be obtained due to differences in cutting conditions and environmental conditions during measurement.

Optimized Tool Processing Solution

Basic Information

Basic Structure
Cutting
Performance

Detailed Information

Optimized Tool Processing Solution
Options
Capacity Diagram
Specifications

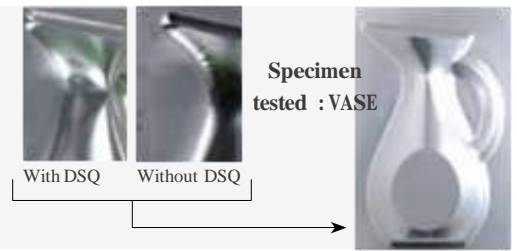
Customer Support Service

Superior surface finishes and machining accuracy are achieved through using standard processing solutions such as high-speed / high-precision contour control and thermal displacement compensation.

High Speed / High Precision Contour Control

~DSQ : Doosan Super Quality

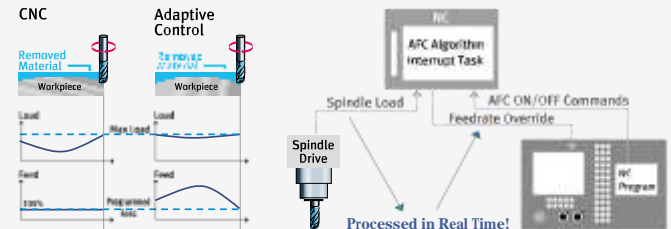
- **DSQ3**
(DSQ2 + High speed processing _ 600 Block)



The Optimal Feed Control (DAFC*)

~DAFC : Doosan Adaptive Feedrate Control

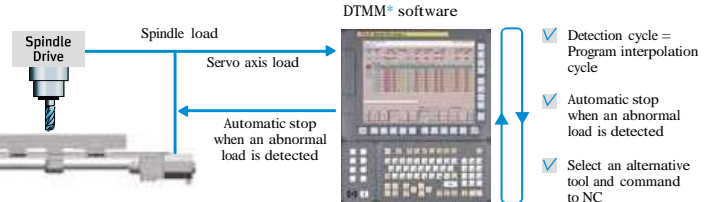
Optimal feed control is ensured by real-time spindle load detection.



Tool Load Monitoring System (DTMM*) option

~DTMM : Doosan Tool load Monitoring for Machining Centers

The technology of protecting tool and machine in abnormal load during the cutting process



Smart thermal displacement multi compensation technology (DSTC*)

~DSTC : Doosan Smart Thermal Control

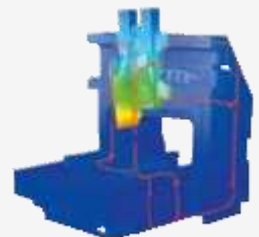
Realizes high-quality, high-precision machining with smoothing thermal displacement compensation of the spindle and structure.

Compensation of static displacement of spindle

Compensates changes in tool position caused by expansion of the spindle shaft at high speed.

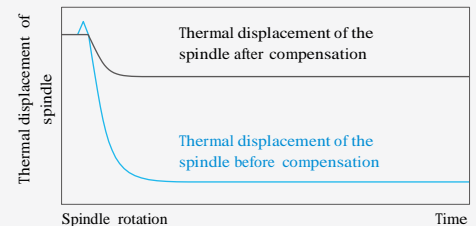
Structure thermal displacement compensation

Compensates irregular deflection or expansion of the structure due to ambient temperature using a multiple temperature sensors.



Compensation of structure thermal displacement

Thermal error of the spindle caused by heat accumulation is compensated with 5 algorithms including a smoothing function.





Standard/Optional Specifications

Diverse optional features are available to meet specific customer requirements.

≈ Standard ≠ Optional X N/A

NO.	Description	Features	NX 5500Ⅱ	NX 6500Ⅱ
1	Air blower		≈	≈
2	Air gun		≠	≠
3	Auto NC power off		≠	≠
4	Auto workpiece measurement		≠	≠
5	Automatic tool changer	24 Tools	X	X
6		30 Tools	≈	≈
7	Automatic tool measurement	TS27R : RENISHAW	≈	≈
8	Automatic tool measurement master tool		≠	≠
9	Chip conveyor	Hinge / Scraper / Drum filter type	≠	≠
10	Coolant chiller		≠	≠
11	Coolant gun		≠	≠
12	Coolant Pump		≈	≈
13	Coolant Tank		≈	≈
14	DAFC		≈	≈
15	DSQ	DSQ3	≈	≈
16	DSTC		≈	≈
17	DTMM		≠	≠
18	Easy Operation Package	Tool load monitor	≈	≈
19		Alarm / M-code / G-code / ATC recovery help	≈	≈
20		Table moving for setup / Easy work coordinate setting	≈	≈
21	Electric cabinet air conditioner		≠	≠
22	Electric cabinet light		≠	≠
23	Electric cabinet line filter		≠	≠
24	Gravity axis drop prevention		≠	≠
25	Linear scale	X Axis	≠	≠
26		Y Axis	≠	≠
27		Z Axis	≠	≠
28	MPG	1 MPG_PORTABLE TYPE	≈	≈
29		1 MPG_PORTABLE_W/ENABLE TYPE	≠	≠
30	NC System	FANUC 3 iB	≈	≈
31		HEIDENHAIN iTNC530	≠	≠
32	NC system lcd size	10.4 inch_FANUC (Color)	≈	≈
33		15.1 inch_HEIDENHAIN (Color)	≠	≠
34	Oil Skimmer	Belt type	≠	≠
35	Power transformer		≠	≠
36	Spindle motor power	22 / 11 kW (30 / 15 Hp)	≈	≈
37		18.5 / 13 kW (25 / 17 Hp)	≠	≠
38		5.5 / 3.7 kW (7 / 5 Hp)	≠	≠
39	Spindle speed	20000 r/min	≈	≈
40		30000 r/min	≠	≠
41		40000 r/min	≠	≠
42	Test bar		≠	≠
43	Through spindle coolant	NONE	≈	≈
44		1.5 kW (2 Hp)_2.0 MPA (2 Hp)	≠	≠
45		5.5 kW (7.4 Hp)_7.0 MPA_DUAL BAG FILTER	≠	≠
46	Work & tool counter	WORK / TOOL	≠	≠



Optional Equipments

Deliver excellent performance on diverse machining conditions.

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Basic Structure
Cutting
Performance

Detailed Information

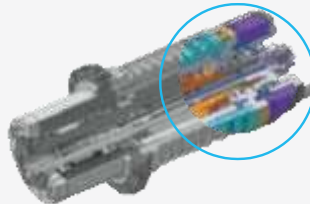
Optimized Tool
Processing Solution
Options
Capacity Diagram
Specifications

Customer Support Service



1. Constant pre-load

Constant pressure spindle for high rigidity in low speed range and long life in high speed range.



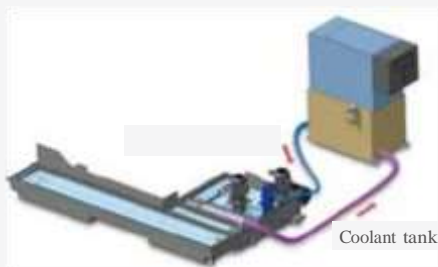
2. Standard chip pan and chip disposal

Chips are discharged to left side via screw conveyor.



3. Coolant chiller (strongly recommended)

option



4. Machine temperature controlled spindle and axis drive cooling system

Accurate spindle cooling
Accurate ball screw cooling



5. Auto tool measuring equipment

Tool length measurement
Tool diameter measurement
Damaged tool detection

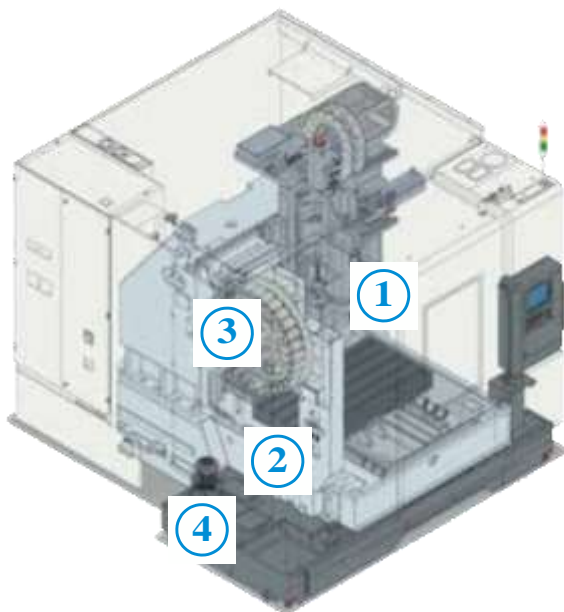


6. Graphite cutting solution **option**

Fine graphite powder sealing. Wet/dry chip disposal

Chip Disposal

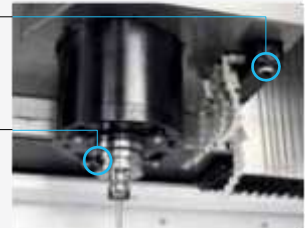
Through rapid discharge of chips, it maintains a high degree of efficient processing, and supports the operator to work in improved environment by providing a variety of chip treatment devices.



1. Coolant system

Side coolant chip air blower. Coolant residue stopping device

Spindle face coolant **option**



2. Screw conveyor

Two-rows screw type.



3. Barrier between the magazine and cutting area

The tool storage of the mag protected from the cutting area by an automatic door.



4. Chip conveyor **option**

NX 6500 II - Side discharge
NX 5500 II - Rear discharge



Hinge type



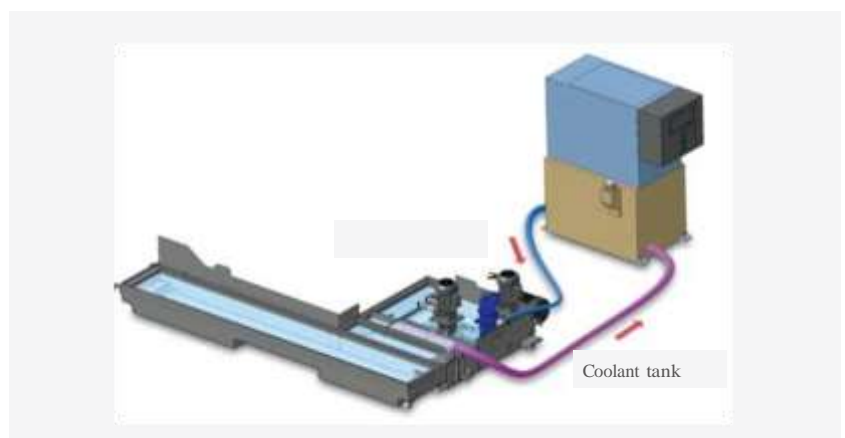
Scraper type



Drum filter type

Coolant Chiller (highly recommended) **option**

The coolant chiller lowers coolant temperature, helping to cool both the workpiece and tool during the machining operation. When using insoluble cutting oils, a coolant chiller is recommended to cool heated oil and preserve machining precision.





perating console

Operator convenience and work efficiency have been improved with adoption of various convenient control functions and ergonomic design.



Basic Structure
Cutting
Performance

Detailed Information

Optimized Tool
Processing Solution
Options
Capacity Diagram
Specifications

Customer Support
Service

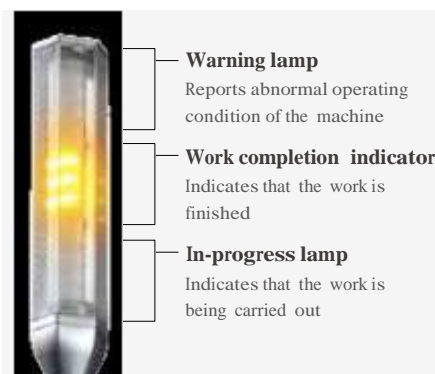
Excellent Accessibility

A	NX 5500 II		
	NX 6500 II		
B	NX 5500 II	mm (inch)	265 (10)
	NX 6500 II	mm (inch)	280 (11)
C	NX 5500 II	mm (inch)	860 (34)
	NX 6500 II	mm (inch)	780 (31)

Convenient Absolute Feed

The current position of the machine is stored and maintained using battery power. Zero point return is not necessary after a power cycle.

System Condition Indicator



LED Indoor Work Light





Easy Operation Basic Information Package

These Doosan software packages have been customized to provide fast and easy setup of tooling, workpiece, and program. These functions minimize the idle time caused by process setup and maximize the machine's productivity.



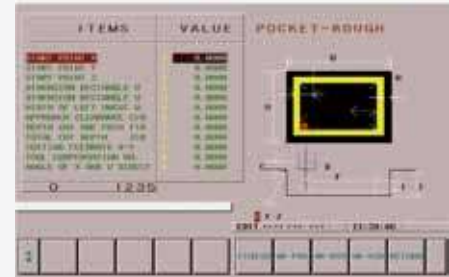
Adaptive Feed Control (AFC)

Function to control feedrate so that the cutting can be carried out at a constant load (To adapt to the spindle load, set up with constant load feedrate control function).



Tool Management

Function to manage tool information [Tool information / Tool No. / Tool condition (normal, large diameter, worn / damaged used for the first time, manual) / Tool name]



Tool Load Monitor

Function to automatically monitor tool load (Different loads can be set for one tool according to M700 ~ M704)

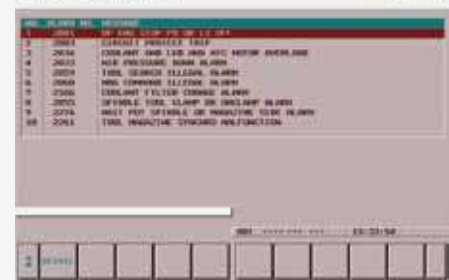


Pattern Cycle & Engraving

Function to create frequently-used cutting programs automatically

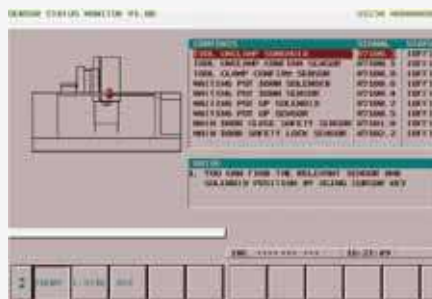
Pattern Cycle: creates a program for a pre-defined **option**

Engraving: creates a program for cutting a shape described with characters (option)



Work Offset Setting

Function to configure various work offset settings



Alarm Guidance

Function to show detailed info on frequently triggered alarms, and recommended actions



Sensor Status Monitor

Function to view sensor conditions of the machine

ATC Recovery

Function to view detailed info with recommended actions and to perform step-by-step operation manually (when an alarm is triggered during an ATC operation)

External Dimensions

Basic Information

- Basic Structure
- Cutting
- Performance

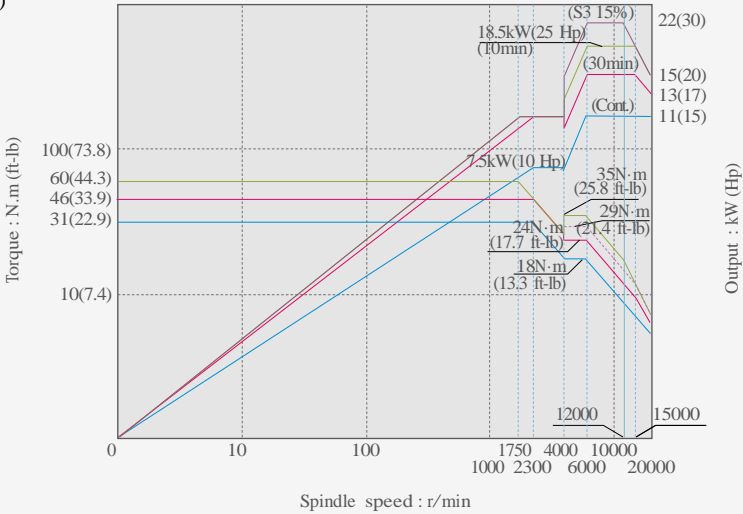
Detailed Information

- Optimized Tool
- Processing Solution
- Options
- Capacity Diagram
- Specifications

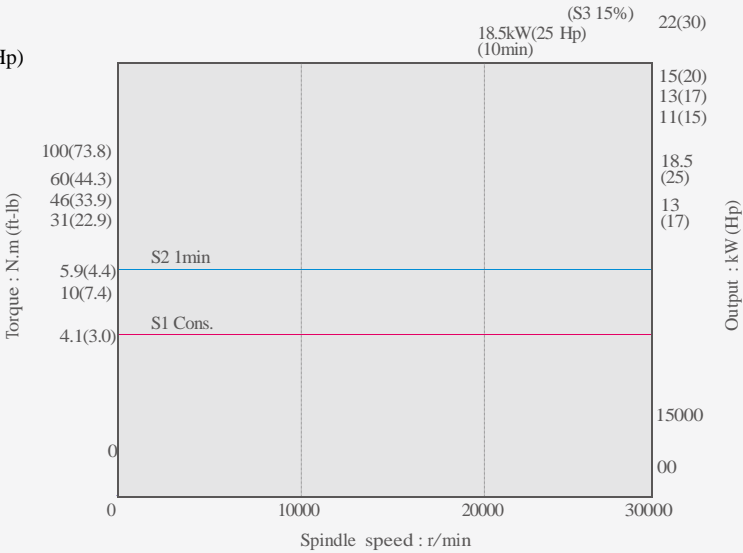
Customer Support Service

NX 5500 II / 6500 II

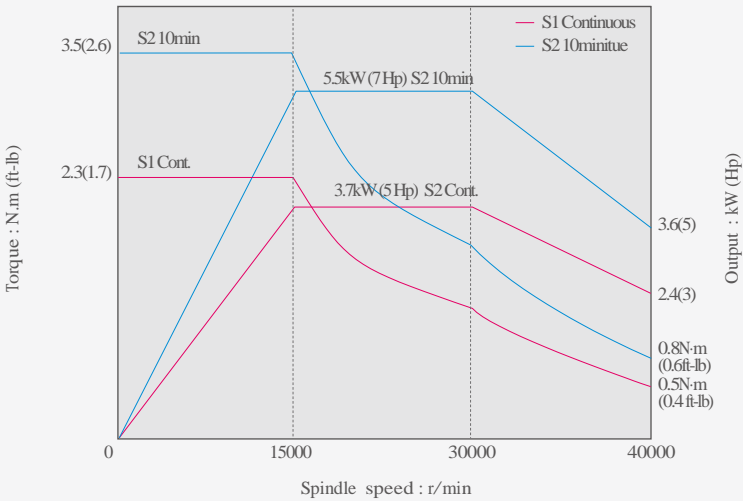
Max. spindle speed : 20000 r/min
Spindle motor power : 22 kW (30 Hp)
Taper : ISO #40



Max. spindle speed : 30000 r/min
Spindle motor power : 18.5 kW (25 Hp)
Taper : HSK F63 [option](#)



Max. spindle speed : 40000 r/min
Spindle motor power : 5.5 kW (7 Hp)
Taper : HSK E40 [option](#)

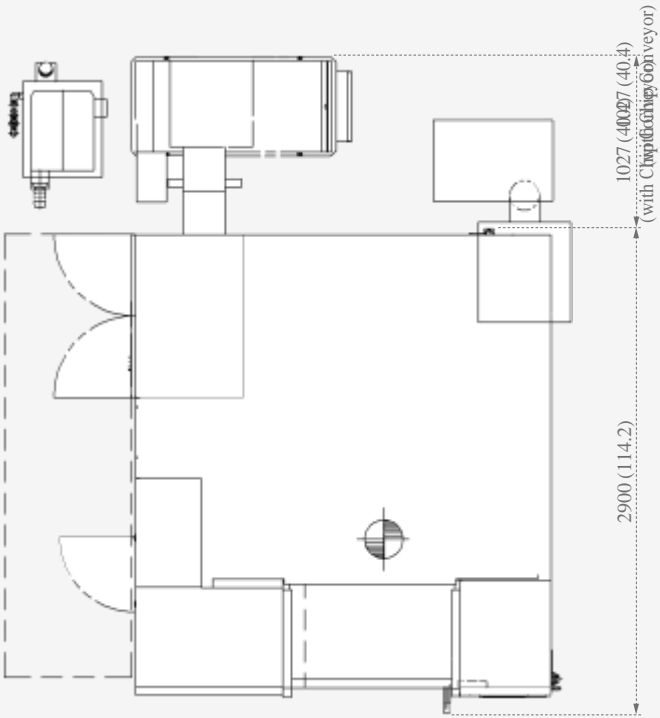


Spindle Power – Torque Diagram

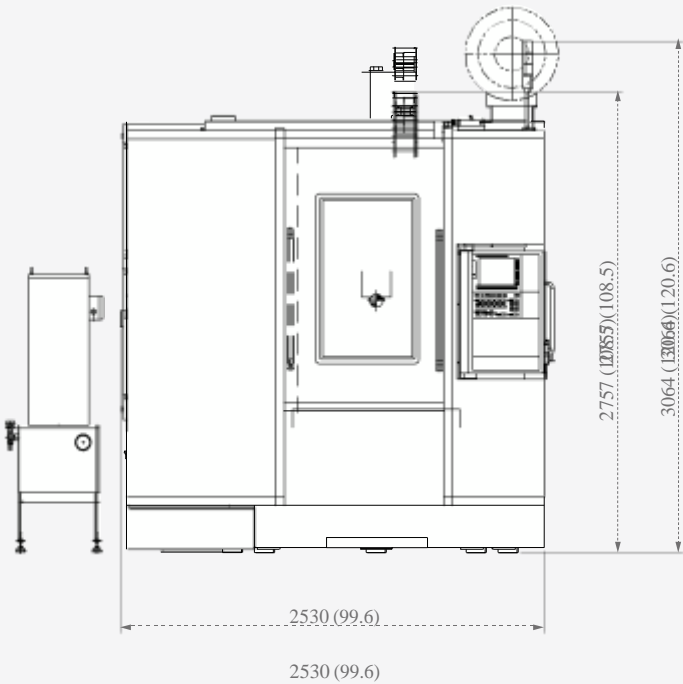
NX 5500 II

Unit: mm (inch)

Top View



Front View



External Dimensions

- Basic Information
- Basic Structure
- Cutting
- Performance

Detailed Information

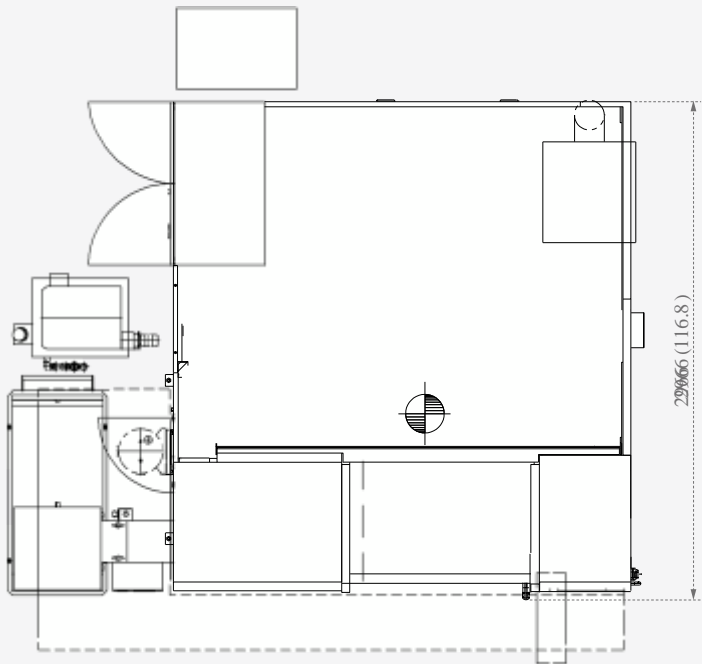
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- Processing Solution
- Options
- Capacity Diagram
- Specifications

Customer Support Service

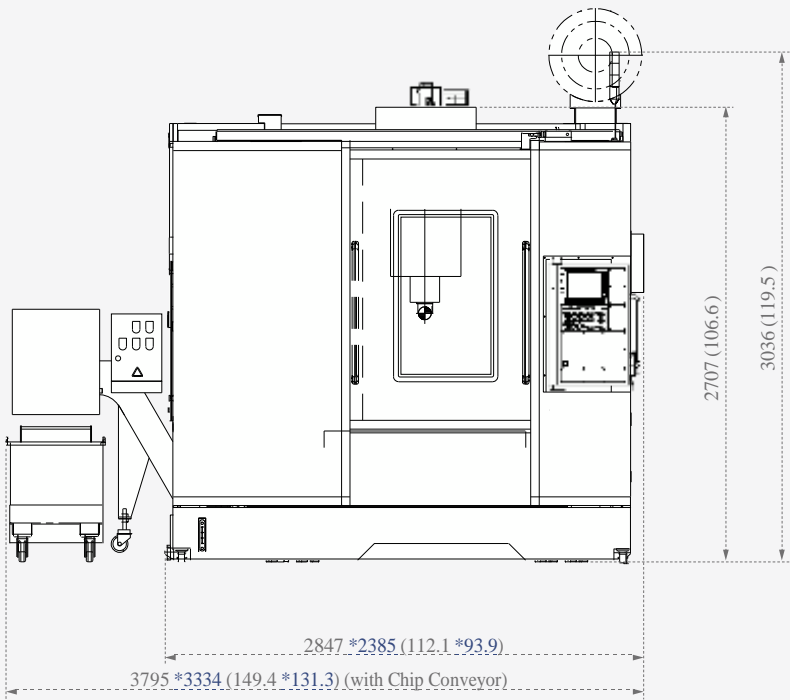
NX 6500 II

Unit : mm (inch)

Top View



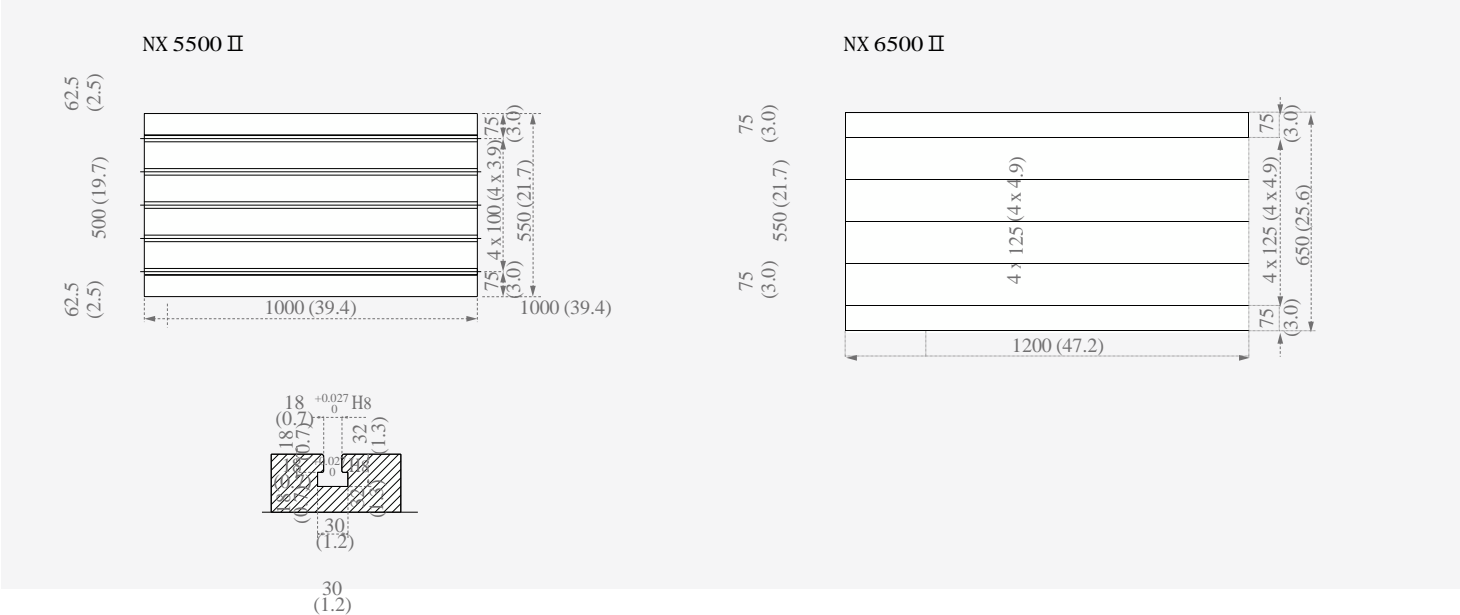
Front View



External Dimensions

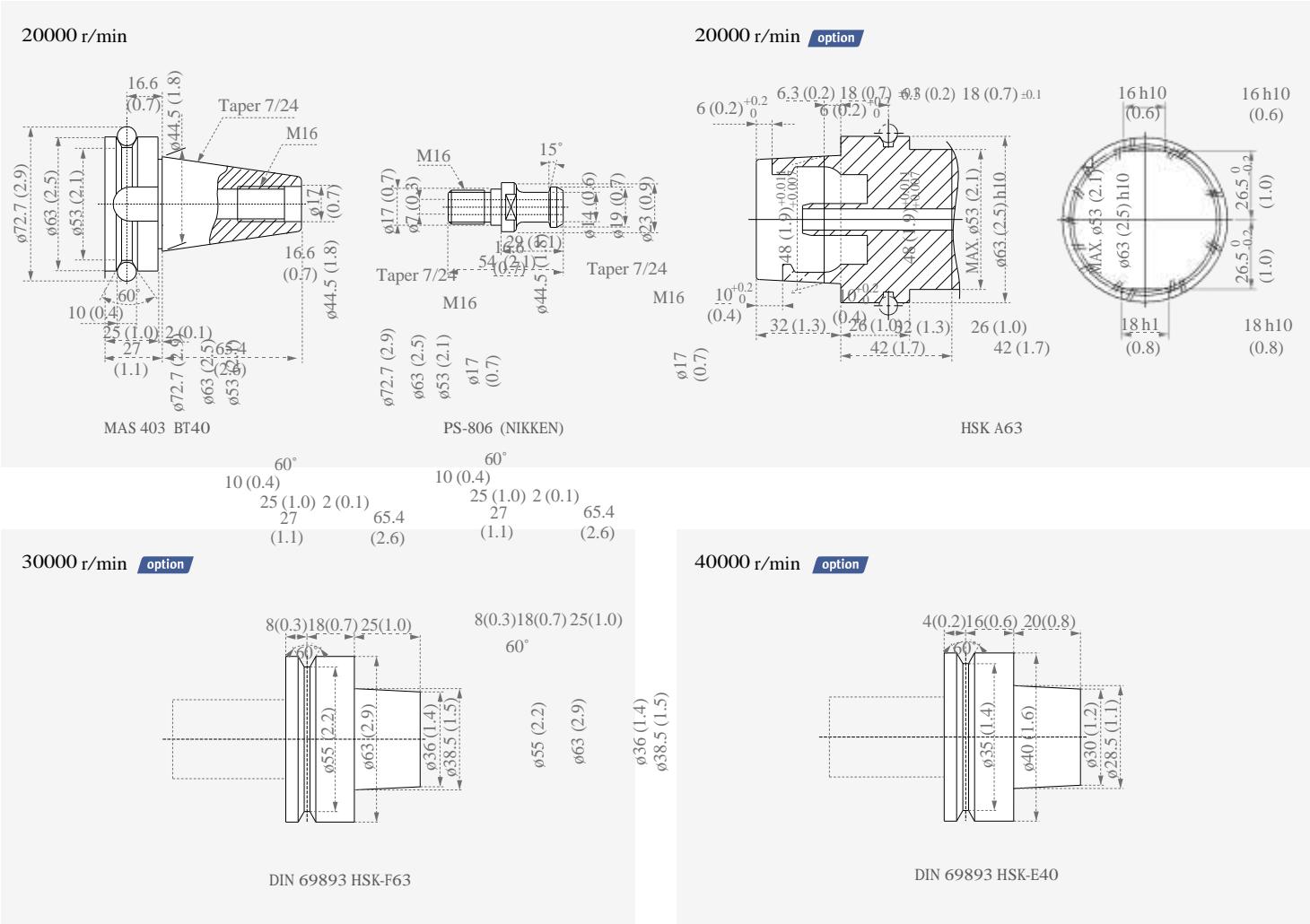
Table dimensions

Unit: mm (inch)



Tool shank

Unit: mm (inch)



Basic Information

- Basic Structure
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- Performance

Detailed Information

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- Options
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Machine Specifications



Item		Unit	NX 5500II	NX 6500II
Travels	X, Y, Z axis	mm (inch)	900 / 550 / 500 (35.4 / 21.7 / 19.7)	1050 / 650 / 550 (41.3 / 25.6 / 21.7)
	Distance from spindle nose to table top	mm (inch)	150 ~ 650 (5.9 ~ 25.6)	150 ~ 700 (5.9 ~ 27.6)
Feedrates	Rapid traverse (X / Y / Z axis)	m/min (ipm)	30 / 30 / 30 (1181.1)	
	Cutting feedrate	m/min (ipm)	15 (590.6)	
Table	Table size	mm (inch)	1000 x 550 (39.4 x 21.7)	1200 x 650 (47.2 x 25.6)
	Table loading capacity	Kg (lb)	700 (1543.2)	800 (1763.7)
Spindle	Max. spindle speed	r/min	20000 [30000, 40000]*	
	Spindle motor (10min/cont.)	kW (Hp)	22 / 11 (29.5 / 14.8) [18.5 / 13 (24.8 / 17.4), 5.5 / 3.7 (7.4 / 5.0)]*	
	Taper spindle	Taper	ISO #40 7/24 [HSK-F63, HSK-E40]*	
	Max. spindle torque (10min)	N.m (ft-lbs)	60 (44.3) [5.9, 3.5 (4.3, 2.6)]*	
Automatic Tool Changer	Number of tools	ea	30	30
	Max. tool diameter	mm (inch)	80 (3.1)	
	Max. tool diameter without adjacent tools	mm (inch)	125 (4.9)	
	Max. tool length	mm (inch)	220 (8.7)	250 (9.8)
	Max. tool weight	Kg (lb)	7 (15.4)	8 (17.6)
	Tool change time (tool-to-tool)	s	1.6	
Power Source	Electric power supply	kVA	46.6 [43, 31]*	48.6 [47, 35]*
Tank Capacity	Coolant tank capacity	L (gal)	230 (60.8)	
	Lubrication tank capacity	L (gal)	3.0 (0.8)	4.3 (1.1)
Machine DeMnsions	Length x Width	mm (inch)	2530 x 2900 (99.6 x 114.2)	2847 x 2966 (112.1 x 116.8)
	Height	mm (inch)	3064 (120.6)	3036 (119.5)
	Weight	Kg (lb)	9000 (19841.3)	10000 (22046.2)
NC system		-	FANUC 31i [HEIDENHAIN]*	

NC Unit Specifications

≅ Standard ≠ Optional X N/A

FANUC

No.	Item	Spec.	FANUC 31i
1	AXES CONTROL	Controlled axes	3 (X, Y, Z)
2		Additional controlled axes	5 axes in total
3		Least command increment	0.001 mm / 0.0001"
4		Interpolation type pitch error compensation	≅
5	INTERPOLATION & FEED FUNCTION	2nd reference point return	G30
6		3rd / 4th reference return	
7		Inverse time feed	≅
8		Cylindrical interpolation	G07.1
9		Helical interpolation B	Only Fanuc 30i
10		Smooth interpolation	≅
11		NURBS interpolation	≅
12		Involute interpolation	≅
13		Helical involute interpolation	≅
14		Bell-type acceleration/deceleration before look ahead interpolation	≅
15		Automatic corner override	G62
16		Manual handle feed	Max. 3unit
17		Manual handle feed rate	x1, x10, x100 (per pulse)
18		Handle interruption	≅
19		Manual handle retrace	≅
20		Manual handle feed 2/3 unit	≅
21		Nano smoothing	AI contour control II is required.
22		AI APC	20 BLOCK
23		AICC I	30 BLOCK
24		AICC I	40 BLOCK
25		AICC II	200 BLOCK
26		AICC II	400 BLOCK
27		High-speed processing	600 BLOCK
28		Look-ahead blocks expansion	1000 BLOCK
29		DSQ I	AICC II (200block) + Machining condition selection function
30		DSQ II	AICC II (200block) + Machining condition selection function + Data server(1GB)
31		DSQ III	AICC II with high speed processing (600block) + Machining condition selection function + Data server(1GB)
32	SPINDLE & M-CODE FUNCTION	M- code function	≅
33		Rigid tapping	G84, G74
34	TOOL FUNCTION	Number of tool offsets	64 ea
35		Number of tool offsets	99 ea
36		Number of tool offsets	200 ea
37		Number of tool offsets	400 ea
38		Number of tool offsets	499 / 999 / 2000 ea
39		Tool nose radius compensation	G40, G41, G42
40		Tool length compensation	G43, G44, G49
41		Addition of tool pairs for tool life management	≅
42	PROGRAMMING & EDITING FUNCTION	Tool offset	G45 - G48
43		Custom macro	≅
44		Part program storage	256KB (640m)
45		Part program storage	512KB(1,280m)
46		Part program storage	1MB(2,560m)
47		Part program storage	2MB(5,120m)
48		Part program storage	4MB(1,0240m)
49		Part program storage	8MB(2,0480m)
50		Inch/metric conversion	G20 / G21
51		Number of Registered programs	400 ea
52		Number of Registered programs	500 ea
53		Number of Registered programs	1000 ea
54		Number of Registered programs	4000 ea
55		Optional block skip	9 BLOCK
56		Program number	04-digits
57		Playback function	≅
58		Addition of workpiece coordinate system	G54.1 P1 - 48 (48 pairs)
59		Addition of workpiece coordinate system	G54.1 P1 - 300 (300 pairs)
60	OTHERS FUNCTIONS (Operation, setting & Display, etc)	High speed skip function	≅
61		Polar coordinate command	G15 / G16
62		Polar coordinate interpolation	G12.1 / G13.1
63		Programmable mirror image	G50.1 / G51.1
64		Scaling	G50, G51
65		Single direction positioning	G60
66		Pattern data input	≅
67		Jerk control	AI contour control II is required.
68		Fast Data server with1GB PCMCIA card	≅
69		Fast Ethernet	≅
70		3-dimensional coordinate conversion	≅
71		3-dimensional tool compensation	≅
72		Figure copying	G72.1, G72.2
73		Machining time stamp function	≅
74		EZ Guide I with 10.4" Color TFT	Doosan infracore Conversational Programming Solution -.When the EZ Guide i is used, the Dynamic graphic display cannot application
75		Dynamic graphic display (with 10.4" Color TFT LCD)	Machining profile drawing. -.When the EZ Guide i is used, the Dynamic graphic display cannot application

Basic Information

Basic Structure
Cutting
Performance

Detailed Information

Optimized Tool
Processing Solution
Options
Capacity Diagram
Specifications

Customer Support Service

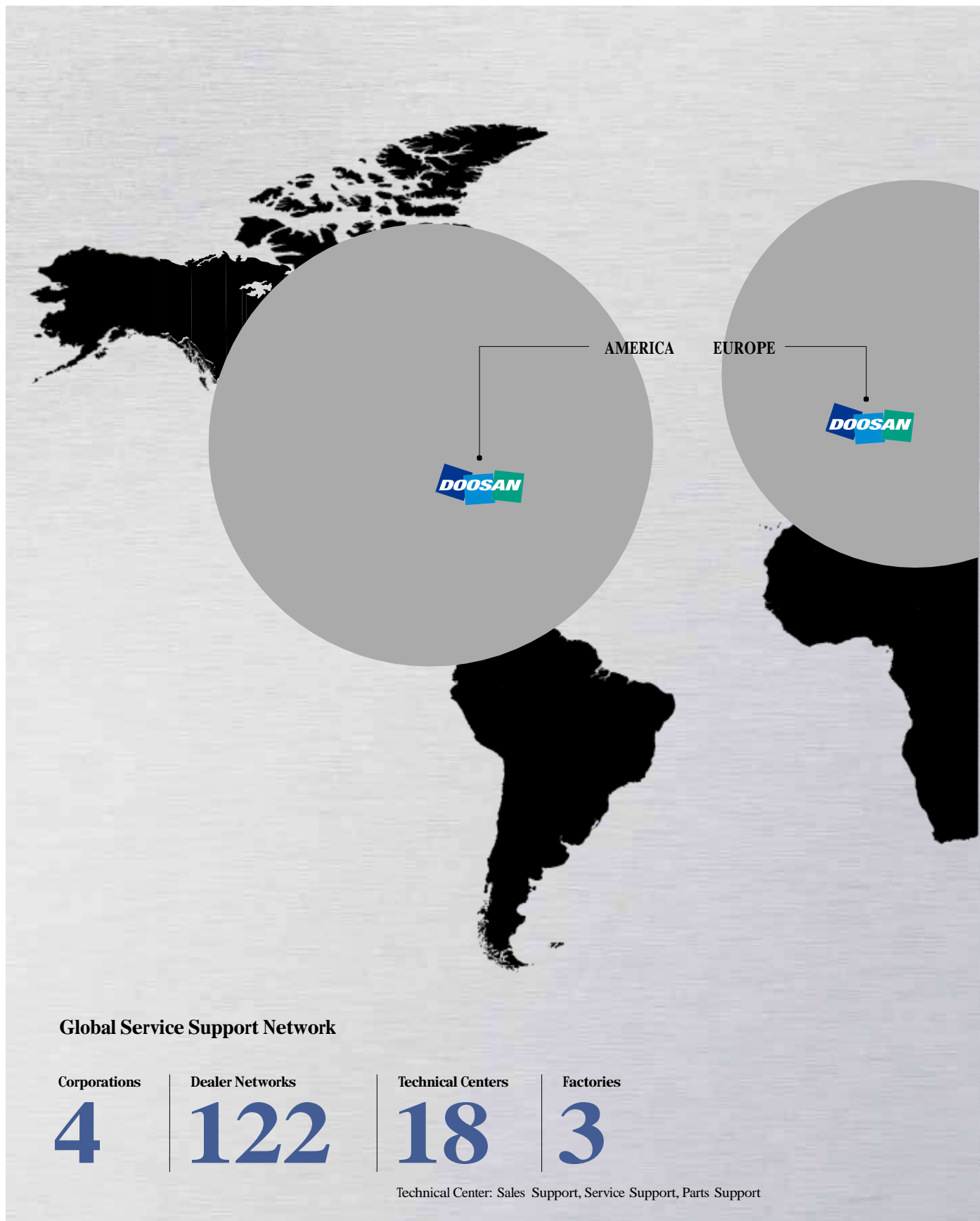
HEIDENHAIN

No.	Item	Spec.	iTNC 530
1	Axes	Controlled axes	3 axes
2			4 axes
3			5 axes
4		Additional controlled axes	6 axes
5		Controlled axes	Max. 18 axes in total
6		Least command increment	0.0001 mm (0.0001 inch), 0.0001°
7		Least input increment	0.0001 mm (0.0001 inch), 0.0001°
8		Maximum commandable value	±99999.999mm (±3937 inch)
9		Axis feedback control	Double-speed control loops for high-frequency spindles and torque/linear motors
10		MDI / DISPLAY unit	15.1 inch TFT color flat panel
11			19 inch TFT color flat panel
12		Program memory for NC programs	SSDR
13		Block processing time	0.5 ms
14		Cycle time for path interpolation	CC 61xx
15		Encoders	Absolute encoders
16	Commissioning and diagnostics	Data interfaces	Ethernet interface
17			USB interface (USB 2.0)
18	Machine functions	Look-ahead	Intelligent path control by calculating the path speed ahead of time (max. 1024 blocks.)
19		HSC filters	
20		Switching the traverse ranges	
21	User functions	Program input	According to ISO
22			With smart.NC
23			With smartSelect
24		Position entry	Nominal positions for lines and arcs in Cartesian coordinates
25			Incremental or absolute dimensions
26			Display and entry in mm or inches
27			Display of the handwheel path during machining with handwheel superimpositioning
28			Paraxial positioning blocks
29		Tool compensation	In the working plane and tool length
30			Radius-compensated contour lookahead for up to 99 blocks (M120)
31			Three-dimensional tool radius compensation
32		Tool table	Central storage of tool data
33			Multiple tool tables with any number of tools
34		Cutting-data table	Calculation of spindle speed and feed rate based on stored tables
35		Constant contouring speed	relative to the path of the tool center or to the tool's cutting edge
36		Parallel operation	Creation of a program while another program is being run
37		Tilting the working plane with Cycle 19	
38		Tilting the working plane with the PLANE function	
39		Manual traverse in tool-axis direction	after interruption of program run
40		Function TCPM	Retaining the position of tool tip when positioning tilting axes
41		Rotary table machining	Programming of cylindrical contours as if in two axes
42			Feed rate in distance per minute
43		FK free contour programming	for workpieces not dimensioned for NC programming
44		Program jumps	Subprograms and program section repeats
45			Calling any program as a subprogram
46		Program verification graphics	Plan view, view in three planes, 3-D view
47			3-D line graphics
48		Programming graphics	3-D line graphics

HEIDENHAIN

No.	Item	Spec.	iTNC 530
49	User functions	Program-run graphics	(plan view, view in three planes, 3-D view) ≈
50		Datum tables	Saving of workpiece-specific datums ≈
51		Preset table	Saving of reference points ≈
52		Freely definable table	after interruption of program run ≈
53		Returning to the contour	With mid-program startup ≈
54			After program interruption (with the GOTO key) ≈
55		Autostart	≈
56		Actual position capture	≈
57		Enhanced file management	≈
58		Context-sensitive help for error messages	≈
59		TNCguide	Browser-based, context-sensitive help system ≈
60		Calculator	≈
61		Entry of text and special characters	≈
62		Comment blocks in NC program	≈
63		"Save As" function	≈
64		Structure blocks in NC program	≈
65		Entry of feed rates	FU (feed per revolution) ≈
66			FZ (tooth feed per revolution) ≈
67			FT (time in seconds for path) ≈
68			FMAXT (only for rapid traverse pot: time in seconds for path) ≈
69		Dynamic collision monitoring (DCM)	≠
70		Fixture monitoring	≠
71		Processing DXF data	≠
72		Global program settings (GS)	≠
73		Adaptive feed control (AFC)	≠
74		KinematicsOpt	Automatic measurement and optimization of machine kinematics ≠
75		KinematicsComp	Three-dimensional compensation ≠
76		3D-ToolComp	Dynamic 3-D tool radius compensation ≠
77		FUNCTION MODE TURN	Switchover to turning mode X
78		FUNCTION MODE MILL	Switchover to milling mode X
79		TOOLTURN.TRN	Tool table for turning tools X
80		Tool compensation for turning	X
81		FUNCTION TURNDATA SPIN VCONST ON VC:253	Constant surface speed with optional spindle speed limiting X
82		FUNCTION TURNDATA BLANK	Blank-form update during turning X
83		GRV AXIAL, GRV RADIAL	Undercut as contour element X
84		UDC TYPE	Recess as contour element, types E, F, H, K, U, threads X
85		Imbalance monitoring	Cycles for determining and monitoring imbalance X
86	Fixed cycles	Working plane	Cycle 19 ≈
87		Cylinder surface	Cycle 27 ≈
88		Cylinder surface slot milling	Cycle 28 ≈
89		Cylinder surface ridge milling	Cycle 29 ≈
90	Touch probe cycles	Calibrating the effective radius on a circular stud	X
91		Calibrating the effective radius on a sphere	X
92	Cycles for automatic workpiece inspection	Calibrate TS	≈
93		Calibrate TS length	≈
94		Measure axis shift	≈
95		Save kinematics	≈
96		Measure kinematics	≈
97		Preset compensation	≈
98	Options	Software option 1	≈
99		Rotary table machining	Programming of cylindrical contours as if in two axes
100			Feed rate in mm/min
101		Coordinate transformation	Tilting the working plane, PLANE function
102		Interpolation	Circular in 3 axes with tilted working plane
103		Software option 2	≈
104		3-D machining	3-D tool compensation through surface normal vectors
105			Tool center point management (TCPM)
106			Keeping the tool normal to the contour
107			Tool radius compensation normal to the tool direction
108		Interpolation	Line in 5 axes (subject to export permit)
109			Spline: execution of splines (3rd degree polynomial)

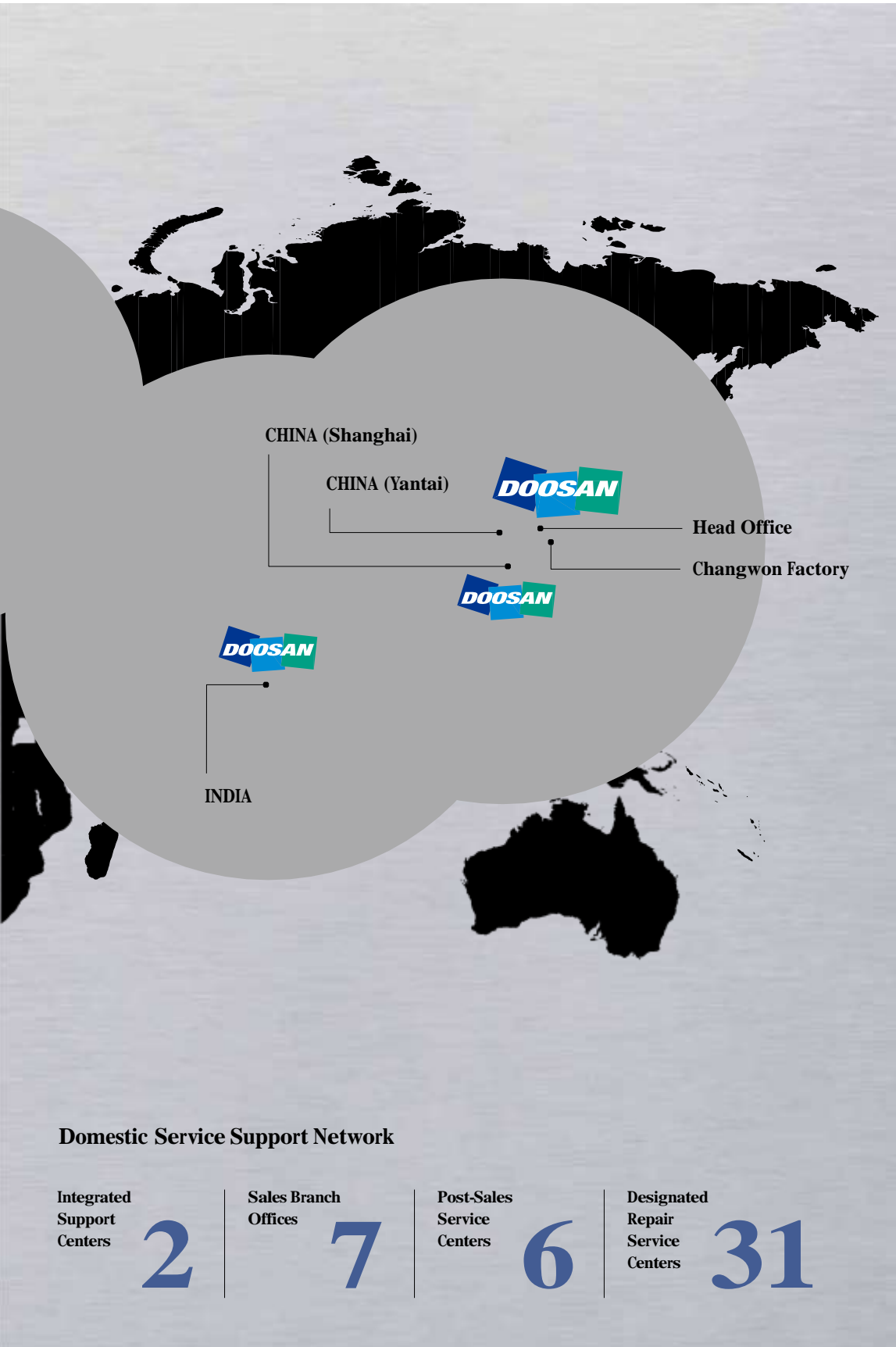
Responding to Customers Anytime, Anywhere



Doosan Machine Tools' Global Network, Responding to Customer's Needs nearby, Anytime, Anywhere

Doosan machine tools provides a system-based professional support service before and after the machine tool sale by responding quickly and efficiently to customers' demands.

By supplying spare parts, product training, field service and technical support, we can provide top class support to our customers around the world.



Customer Support Service

We help customers to achieve success by providing a variety of professional services from pre-sales consultancy to post-sales support.

Supplying Parts



- Supplying a wide range of original Doosan spare parts
- Parts repair service

Field Services



- On site service
- Machine installation and testing
- Scheduled preventive maintenance
- Machine repair

Technical Support



- Supports machining methods and technology
- Responds to technical queries
- Provides technical consultancy

Training



- Programming / machine setup and operation
- Electrical and mechanical maintenance
- Applications engineering

Major Specifications

NX II series



Description	UNIT	NX 5500 II	NX 6500 II
Max. spindle speed	r/min	20000	
Spindle motor power	kW (hp)	22 / 11 (30 / 15)	
Taper spindle	Taper	ISO #40 7/24	
Travels (X, Y, Z)	mm (inch)	900 / 550 / 500 (35.4 / 21.7 / 19.7)	1050 / 650 / 550 (41.3 / 25.6 / 21.7)
Number of tools	ea	30	30
Table size	mm (inch)	1000 x 550 (39.4 x 21.7)	1200 x 650 (47.2 x 25.6)
NC system	-	FANUC 31i	



Doosan Machine Tools

<http://www.doosanmachinetools.com>

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➤ For more details, please contact Doosan Machine Tools.

➤ The specifications and information above-mentioned may be changed without prior notice.